UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R036XC108NM

Site Name: Basalt Hills

Precipitation or Climate Zone: 12 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

The topography of this site varies from moderately steep to steep. Slopes generally exceed 15 percent and may average 40 percent. Basaltic rocks and sometimes boulders and outcrops are often present in large amounts. Elevation range from about 5,000 to 7,500 feet above sea level.

Land Form:

1. Lava flow
2.
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	5,000	7,500
Slope (percent)	>15	>40
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

Average annual precipitation varies from about 12 inches to just over 16 inches. Substantial fluctuations from year to year are common, ranging from a low of about 6 inches to a high of over 30 inches. Approximately one-half of the annual precipitation comes in the form of rainfall during the months of July, August, and September, although wintertime precipitation in the form of snow, sleet, or rain is sometimes significant. Spring and late fall months are normally dry.

The average frost-free period ranges from about 165 to 190 days and extends from approximately the third or fourth week in April to mid October. Average annual air temperatures are about 56 degrees F. Summer maximums can exceed 100 degrees F and winter minimums on occasion go below zero. Monthly mean temperatures generally exceed 70 degrees F for the period of June through August.

Growing conditions favor warm-season perennial vegetation, although late winter and late summer precipitation is adequate to foster a significant cool-season component in the potential plant community. Occasional wet springs also create good conditions for annual forb production, but frequent winds from the west and southwest are common during this time of year and tend to deplete soil moisture at a critical time for the growth of these plants

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	125	187
Freeze-free period (days):	146	211
Mean annual precipitation (inches):	12	16

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.37	1.22	16.2	55.6
February	.35	.94	18.6	60.1
March	.26	.95	22.1	66.1
April	.26	.42	27.0	74.2
May	.12	.58	34.0	82.6
June	.53	.98	42.8	92.0
July	2.29	3.32	52.5	92.6
August	2.50	3.22	51.4	89.9
September	1.62	2.85	43.5	85.7
October	1.17	1.81	32.0	76.2
November	.41	1.58	22.0	64.4
December	.61	1.85	15.9	55.9

Climate Stations:

				Period		
Station ID	299806	Location	Chloride Ranger Stn., NM	From: 05/14/49	To:	12/31/00
Station ID	291910	Location	Cliff 11SE, NM	From: 01/01/37	To:	12/31/00
Station ID	294009	Location	Hillsboro, NM	From: 10/01/24	To:	12/31/00
Station ID	297386	Location	Hood Ranger Stn., NM	From: 04/01/54	To:	12/31/00
Station ID	298324	Location	Silver City, NM	From: 01/01/61	To:	12/31/00

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

Characteristically, surface textures are stony clay loams, stony loams, cobbly loams, or cobbly clay loams. The soils are very shallow to moderately deep over basalt or deep but stony throughout. Soil, plant, and moisture relationships are good, and soil temperatures may be slightly warmer than those of surrounding soils due to darker color may. Water-holding capacity is low to moderate. Permeability is moderate to moderately slow. Boulders, cobbles, and outcrops may occur frequently and in some instances may impede livestock movement.

Parent Material Kind: Volcanic ash
Parent Material Origin: Basalt

Surface Texture:

1. Stony loam
2. Stony clay loam
3. Cobbly loam

Surface Texture Modifier:

1. Stone
2. Cobble
3.

Subsurface Texture Group: Loamy
Surface Fragments <=3" (% Cover): 15 to 35
Surface Fragments >3" (% Cover): 35 to 60

Subsurface Fragments <=3" (%Volume): 16 to 31
Subsurface Fragments >=3" (%Volume): 35 to 60

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	10	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	3	9
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
Perennial grasses, such as black grama, sideoats grama, blue grama, green sprangletop, and New Mexico feathergrass dominate this site. This site is typically open and virtually free of trees. Shrubs and half-shrubs may include Apacheplume, winterfat, Bigelow sagebrush, yerba-de-pasmo, skunkbush sumac, juniper, and shrub live oak. Species of buckwheat are frequently the dominant forbs.

Canopy Cover:	
Trees	0
Shrubs and half shrubs	5 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	25
Bare ground	5
Surface gravel	20
Surface cobble and stone	35
Litter (percent)	15
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	440	760	1,080
Forb	72	124	176
Tree/Shrub/Vine	44	76	108
Lichen			
Moss			
Microbiotic Crusts			
Total	550	950	1,350

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOER4	Black Grama	238 – 285	238 – 285
2	BOGR2	Blue Grama	48 – 95	48 – 95
3	BOCU	Sideoats Grama	143 – 190	143 – 190
4	PASM HECO26 HENE5 SCSC ELEL5	Western Wheatgrass Needleandthread New Mexico Feathergrass Little Bluestem Bottlebrush Squirreltail	95 – 143	95 – 143
5	BOBA3 LEDU ERIN	Cane Bluestem Green Sprangletop Plains Lovegrass	29 – 76	29 – 76
6	PAOB	Vine-mesquite	10 – 29	10 – 29
7	PLMU3 PLJA	Tobosa Galleta	10 – 48	10 – 48
8	PAHA HIBE	Hall's Panicum Curly Mesquite	10 – 48	10 – 48
9	ARIST BOHI2	Threeawn spp. Hairy Grama	10 – 29	10 – 29
10	2GRAM	Other Grasses	0 – 29	0 - 29

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	ERWR CACO17 ERAN4	Wright Buckwheat Indian Paintbrush Annual Buckwheat	10 – 48	10 – 48
12	2FA	Other Annual Forbs	29 – 48	29 – 48
13	2FP	Other Perennial Forbs	29 – 76	29 - 76

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	FAPA	Apacheplume	10 – 29	10 – 29
	LYPA	Pale Wolfberry		
	RHTR	Skunkbush Sumac		
15	BAPT	Yerba-de-pasmo	10 – 48	10 – 48
	DAFO	Feather Dalea		
	ARGI3	Bigelow Sagebrush		
	KRLA	Winterfat		
16	GAWR3	Wright Silktassel	0 – 10	0 – 10
	CEMOP	Hairy Mountainmahogany		
17	PIED	Pinyon Pine	10 – 29	10 - 29
	JUNIP	Juniper spp.		
	QUERC	Oak spp.		

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Growth Curves

Growth Curve ID **0608NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Grassland with shrub and forb component.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	15	25	25	8	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This ecological site provides habitat which can support a resident animal community characterized by mule deer, cliff chipmunk, rock squirrel, brush mouse, Stephen's woodrat, gray fox, bobcat, ringtail, scrub jay, pinyon jay, harlequin quail, brown towhee, Bewick's wren, plain titmouse, red-shafted flicker, chipping sparrow, ash-throated flycatcher, short-horned lizard, collared lizard, red-spotted toad, black-tailed rattlesnake, mountain patch-nosed snake, and Sonoran mountain kingsnake.

Where cliffs and ledges occur, golden eagle, great horned owl, and prairie falcon hunt. Black-chinned sparrow summers on this site and western bluebird may be seen in the winter. Where adjacent to mountain habitats, elk may range into the site to feed.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Apache	D
Cabezon	D
Majada	B
Motoqua	D
Thunderbird	D

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, picnicking, camping, nature observation, photography, bird watching, and hunting for mule deer, quail, and mourning dove. When favorable growing season moisture conditions occur, a colorful display of wildflowers may be seen.

Wood Products:

This site has little or no significant value for wood products.

Other Products:

Grazing:

This site is suitable for grazing in all seasons of the year. It is suitable for cattle, sheep, goats, and horses, generally without regard to class of animal or season of use. Continuous yearlong grazing over long periods may, however, result in a decline or disappearance of cool-season grasses and preferred browse plants. If grazing use is heavy and prolonged, plants such as black grama, sideoats grama, and little bluestem will also decrease. Substantial increases in tobosa or galleta, curly mesquite, threeawns, juniper, and oak brush, generally characterize retrogression. This site is particularly suited to grazing by more than one species of animal (such as goats and cattle, sheep and cattle, and/or wildlife) in order to maintain a healthy balance of woody and herbaceous plants

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	**Ac/AUM**
100 - 76	3.2 – 4.5
75 – 51	4.3 – 6.6
50 – 26	6.4 – 10.5
25 – 0	10.5+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Little Bluestem	Schizachyrium scoparium	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Green Sprangletop	Leptochloa dubia	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Wright Silktassel	Garrya wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Wright Buckwheat	Eriogonum wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Livestock
Animal Type: Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Little Bluestem	Schizachyrium scoparium	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Green Sprangletop	Leptochloa dubia	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Cane Bluestem	Bothriochloa barbinodis	EP	U	U	U	U	U	U	P	P	D	U	U	U

Animal Kind: Wildlife

Animal Type: Mule Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Hairy Mountainmahogany	Cercocarpus montanus	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Wright Silktassel	Garrya wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Oak spp.	Quercus spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Skunkbush Sumac	Rhus trilobata	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
New Mexico Feathergrass	Hesperostipa neomexicana	EP	U	U	D	D	D	U	U	U	D	D	D	U
Wild Buckwheat	Eriogonum spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Winterfat	Krascheninnikovia lanata	EP	D	D	D	D	D	D	D	D	D	D	D	D
Most other forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Grant, Catron, Sierra, Socorro**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the New Mexico and Arizona Plateaus and Mesas 36 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Socorro, Sierra, Grant, Catron.

Characteristic Soils Are:	
Apache	Cabezon
Thunderbird	
Other Soils included are:	
Luzena	Majada
Motoqua	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	04/25/80	Durwood E. Ball	04/29/80

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	07/05/02	George Chavez	12/17/02